



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,807	04/16/2004	Seung-Won Shin	CQ10156	8691

23493 7590 04/23/2008
SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

SAUNDERS JR, JOSEPH

ART UNIT	PAPER NUMBER
----------	--------------

2615

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

04/23/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@sughrue.com
USPatDocketing@sughrue.com

Office Action Summary	Application No. 10/825,807	Applicant(s) SHIN ET AL.	
	Examiner Joseph Saunders	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the communications filed February 1, 2008.

Claims 1 – 14 are currently pending and considered below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 6 and 8 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,442,517 B1), hereinafter Miller, in view of Ziegler et al. ("Enhancing mp3 with SBR: Features and Capabilities of the new mp3PRO Algorithm"), hereinafter Ziegler, and Johnson et al. (US 2002/0165720 A1), hereinafter Johnson.

Claim 1: Miller discloses a method of inserting sync signal into audio file ("A method of encoding an audio sequence with synchronized data is provided," Abstract.), containing a plurality of frames ("The audio sequence includes a plurality of frames," Abstract.) each frame (Figure 1) includes a first part in which audio contents are stored (audio and ancillary data for frame n), a second part which contains at least information of a size of the first part (header frame n), and a third part which text and sync signal can be inserted into and is within the first part ("In addition, the private bits defined in both the

Art Unit: 2615

header and the audio data frames, as well as the ancillary data frame, can be used to encode lyrical data and control signals, or cues to lyrical data and control signals, within the audio sequence 10, such that it is synchronized with the audio sequence upon the formation of the audio sequence 10,” Column 3 Lines 32 – 38). Miller also discloses the step (c) inserting at least a part of the sync signal into the third part of the frame (control signal, Column 4 Lines 59 – 67).

Miller does not explicitly state wherein a region of the third part which text and sync signal can be inserted into is a part representing high-frequency band signal in stuffing bits of the first part; however while not explicitly stated, the text and sync signal **is** being inserted into a part representing high-frequency band signal in stuffing bits of the first part as illustrated by Ziegler. Ziegler explains that mp3 can be enhanced by using the technique of Spectral Band Replication (SBR). Ziegler goes on to state, “the spectral values of the high band are not transmitted directly as in conventional codecs. Instead, only a limited amount of additional data (SBR-data) is transmitted, which control the reconstruction of the high band at the decoder,” page 2 section 2. Ziegler then teaches, “The additional side information required for the high frequency portion of the audio signal covered by SBR is embedded into the mp3 bitstream as ancillary data,” page 2 – 3 section 3.2. Therefore, since Miller also taught using the ancillary data portion of the frame for the lyrical data and control signals and this is the same ancillary data portion taught by Ziegler to be well known to one of ordinary skill in the art at the time of the invention to represent high-frequency band signal in stuffing bits of the first part, Miller teaches the claimed limitation.

Miller and Ziegler do not explicitly disclose the steps comprising: (a) obtaining information of a size of the first part of the frame from the second part of the frame; and (b) determining a start position and a size of the third part of the frame based on the obtained information. Miller does show that the third part of the frame or ancillary data portion is used to pack the data signal (Figure 4) and therefore must be able to determine when the ancillary data portion begins and also must be able to determine the size of the ancillary data portion to know how much information may be placed in the ancillary data portion. Johnson discloses a similar method of encoding an audio sequence with synchronized data (Paragraphs 13 – 16) and further discloses “the size of a complete frame 110 can be calculated from its bit rate, sampling rate and padding status, which is defined in the header 120,” Paragraph 14, and further discloses that “the size of both samples 170 and ancillary data 180 may be determined from header 120 and side information 160,” Paragraph 15. Therefore, based on this information provided by the second part of the frame or header portion regarding the first part of the frame or audio and ancillary data portion as disclosed by Johnson, it would have been obvious to one of ordinary skill in the art that the time of the invention to determine the size and start position of the third part of the frame or ancillary data portion as necessitated by the method of Miller and Ziegler, so that the appropriate amount of data signal can be placed at correct location designated as the ancillary data portion thereby maintaining compatibility with the MP3 standard (Miller, Column 4 Lines 33 – 40 and Column 5 Lines 28 – 34).

Art Unit: 2615

Claim 2: Miller, Ziegler, and Johnson disclose the method according to claim 1, and Miller and Johnson both further disclose wherein the first part contains the audio contents (audio data), the second part contains header information of the audio file (header), and the third part is a part which is within the first part and least affects the sound quality while playing audio file (ancillary data) (Figure 1 and Column 5 Lines 20 – 27 of Miller and Paragraph 16 of Johnson).

Claim 3: Miller, Ziegler, and Johnson disclose the method according to claim 1, wherein the third part (ancillary data) contains an area which presents whether the sync signal exists (data segment with data and control signal), and an area which presents contents of the sync signal (data segments with data signal only) (Miller, Column 4 Lines 59 – 67).

Claim 4: Miller, Ziegler, and Johnson disclose the method according to claim 1, wherein the sync signal (control signal) contains information of a position of a text (lyrics) which corresponds to the first part (audio data) of the frame (Miller, Column 5 Lines 9 – 46).

Claim 5: Miller, Ziegler, and Johnson disclose the method according to claim 1, wherein said step (c) comprises: deciding whether to insert the sync signal into the third part; and inserting text information which corresponds to the first part of the frame into the third part of the frame, in response to the decision of not inserting the sync signal (Miller, Step 125 of Figure 4).

Claim 6: Miller, Ziegler, and Johnson disclose the method according to any one of claims 1 to 5, Miller and Johnson do not explicitly disclose wherein said step (c) comprises: comparing the sync signal inserting space in the third part with the size of the sync signal, and in case that the sync signal inserting space in the third part is smaller than the size of the sync signal, inserting a part of the sync signal into the third part wherein the part of the sync signal has an equivalent size to the sync signal inserting space. However, as explained in the rejection of claim 1 in order to conform to the MP3 standard as disclosed by Miller (Column 4 Lines 33 – 40 and Column 5 Lines 28 – 34) the information provided by Johnson would be necessary for determining the size of the ancillary data portion and therefore after determining the size, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine how much of the data signal could be contained in the ancillary portion of Miller, and as disclosed by Miller if could therefore be decided that the data segment in the ancillary portion should only contain a fractional portion of the data signal, thereby maintaining compatibility with the MP3 standard.

Claims 8 and 14: Miller discloses a method (“A method of encoding an audio sequence with synchronized data is provided,” Abstract.) and apparatus (Figure 8) for detecting sync signal from an audio file containing a plurality of frames (“A method of encoding an audio sequence with synchronized data is provided,” Abstract.), each frame (Figure 1) includes a first part in which audio contents are stored (audio and ancillary data for

frame n), a second part which contains at least information of a size of the first part (header frame n), and a third part which text and sync signal can be inserted into and is within the first part ("In addition, the private bits defined in both the header and the audio data frames, as well as the ancillary data frame, can be used to encode lyrical data and control signals, or cues to lyrical data and control signals, within the audio sequence 10, such that it is synchronized with the audio sequence upon the formation of the audio sequence 10," Column 3 Lines 32 – 38).

Miller does not explicitly state wherein a region of the third part which text and sync signal can be inserted into is a part representing high-frequency band signal in stuffing bits of the first part; however while not explicitly stated, the text and sync signal **is** being inserted into a part representing high-frequency band signal in stuffing bits of the first part as illustrated by Ziegler. Ziegler explains that mp3 can be enhanced by using the technique of Spectral Band Replication (SBR). Ziegler goes on to state, "the spectral values of the high band are not transmitted directly as in conventional codecs. Instead, only a limited amount of additional data (SBR-data) is transmitted, which control the reconstruction of the high band at the decoder," page 2 section 2. Ziegler then teaches, "The additional side information required for the high frequency portion of the audio signal covered by SBR is embedded into the mp3 bitstream as ancillary data," page 2 – 3 section 3.2. Therefore, since Miller also taught using the ancillary data portion of the frame for the lyrical data and control signals and this is the same ancillary data portion taught by Ziegler to be well known to one of ordinary skill in the art at the

time of the invention to represent high-frequency band signal in stuffing bits of the first part, Miller teaches the claimed limitation.

Miller and Ziegler do not explicitly disclose the steps comprising: extracting information of a start position and a size of the third part based on the information of the size of the first part; analyzing the third part to decide whether the sync signal exists; and obtaining at least a part of the sync signal from the third part, in response to the decision that the sync signal exists. Miller does disclose that the third part of the frame or ancillary data is detected and that the synchronized data signal is retrieved (Figure 6 and 7) therefore in order to locate the ancillary data portion and to know where the ancillary data portion ends, a start position and size must be identified, and one would be inclined to look elsewhere for such teachings. Johnson discloses a similar method of encoding an audio sequence with synchronized data (Paragraphs 13 – 16) and further discloses “the size of a complete frame 110 can be calculated from its bit rate, sampling rate and padding status, which is defined in the header 120,” Paragraph 14, and further discloses that “the size of both samples 170 and ancillary data 180 may be determined from header 120 and side information 160,” Paragraph 15. Also although not explicitly taught, if data is contained within the ancillary then it is implied that the sync signal exists and therefore may be obtained from the ancillary data as disclosed in Figures 7 and 8 and therefore it would have been obvious to one of ordinary skill in the art to check to see whether ancillary data is present in order to correctly determine the data signal of Miller. Therefore, based on this information provided by the second part of the frame or header portion regarding the first part of the frame or audio and ancillary data

Art Unit: 2615

portion as disclosed by Johnson, it would have been obvious to one of ordinary skill in the art that the time of the invention to determine the size and start position of the third part of the frame or ancillary data portion as necessitated by the method of Miller and Ziegler, so that the data signal correctly located at the start of the ancillary data portion thereby maintaining compatibility with the typical prior art decoding method as disclosed in Figure 5 of Miller.

Claim 9: Miller, Ziegler, and Johnson disclose the method according to claim 8, and Miller and Johnson both further disclose wherein the first part contains the audio contents (audio data), the second part contains header information of the audio file (header), and the third part is a part which is within the first part and least affects the sound quality while playing audio file (ancillary data) (Figure 1 and Column 5 Lines 20 – 27 of Miller and Paragraph 16 of Johnson).

Claim 10: Miller, Ziegler, and Johnson disclose the method according to claim 8, wherein the third part (ancillary data) contains an area which presents whether the sync signal exists (data segment with data and control signal), and an area which presents contents of the sync signal (data segments with data signal only) (Miller, Column 4 Lines 59 – 67).

Claim 11: Miller, Ziegler, and Johnson disclose the method according to claim 8, further comprising: extracting text information from the third part, in response to the decision

that the sync signal does not exist (If control information is not present in the data segment then only data signal is present, and since the data signal represents lyrics, it will still be extracted, Miller, Column 5 Line 62 – Column 6 Line 18).

Claim 12: Miller, Ziegler, and Johnson disclose the method according to claim 8, further comprising: analyzing contents of the sync signal, and thereafter constituting text information corresponding text based on the analysis (Miller, Column 4 Lines 59 – 67).

Claim 13: Miller, Ziegler, and Johnson disclose the method according to any one of claims 8 to 12, further comprising: combining at least a part of the sync signal with at least a part of the sync signal of the subsequent frame, in 20 case that at least a part of the sync signal obtained from the third part is not the same as the sync signal. (Miller teaches that the data segments may contain fractional portions, Column 4 Lines 41 – 59, of the data signal and therefore upon decoding these would be recombined in the buffer of Figure 7.)

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller, Ziegler, and Johnson, in view of Kivimaki (US 7,174,295 B1), hereinafter Kivimaki.

Claim 7: Miller, Ziegler, and Johnson disclose the method according to claim 1, but do not disclose wherein the audio contents are produced by TTS (Text-to-Speech) transformation of the text. Miller does disclose that “the audio sample may be an oral

Art Unit: 2615

signal, such as, for example, an audio version of a text, such as, for example, a book, a newspaper or a foreign language textbook,” Column 4 Lines 24 – 32. Kivimaki discloses a user interface for text to speech conversion where in the TTS system the text is synchronized with the audio output of the speech synthesizer (Summary of the Invention). Since there are only two methods of converting text into audio samples one of which is by recording a person reading the text and the other having a computer automatically convert text into speech and recording the audio, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the TTS method as disclosed by Kivimaki for producing the audio samples to be synchronized with data as disclosed by Miller, Ziegler, and Johnson disclose, since it would be cumbersome to record someone reading the entire book when the process could be automated by the TTS process disclosed by Kivimaki.

Response to Arguments

5. Applicant's arguments with respect to claims 1 – 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./

Examiner, Art Unit 2615

April 16, 2008

/Sinh N Tran/

Supervisory Patent Examiner, Art Unit 2615